

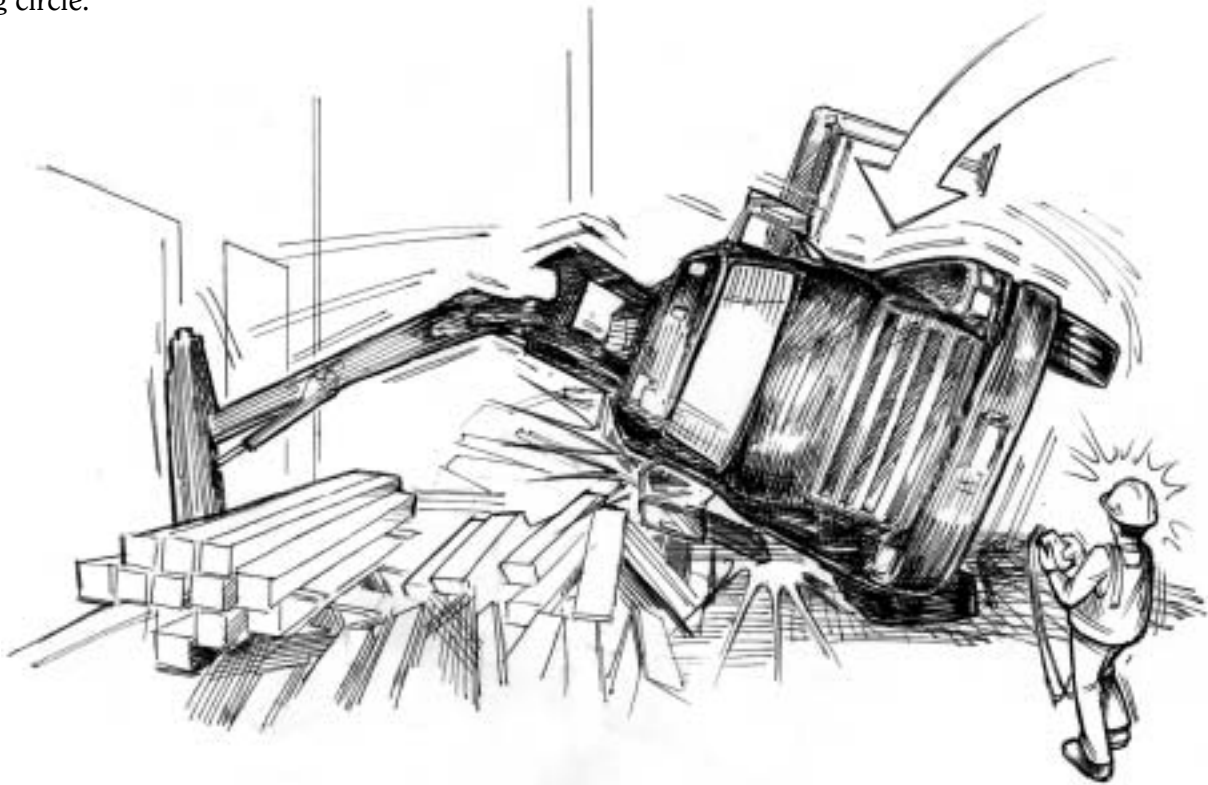
## Articulating Boom Crane Hazard

In a recent incident, a boom truck with an articulating crane overturned sideways while offloading construction materials. The materials being offloaded were the last on the truck and their weight was within the working load limits on the articulating boom crane manufacturer's posted chart. However, the crane involved in the incident was not stable when used in accordance with the crane manufacturer's load chart for the full 360° swing of the crane boom and the boom was swung over an area of reduced stability.

### Load rating for cranes installed on trucks

When a crane is installed on a truck, the size of the truck, strength of the truck platform, size or presence of outriggers, tipping moment, and other mechanical considerations need to be evaluated and used to provide a load rating for the total truck-crane package. The load rating information provided by the articulating boom crane manufacturer reflects structural and hydraulic capacity, not stability, and may not be the limiting capacity for the truck-crane system over the entire swing circle.

The installer must do such an evaluation, along with the required stability testing, and must provide a diagram depicting where the boom may be used to hoist loads safely. The installer must provide load charts appropriate to the particular crane and carrier vehicle. The crane operator needs this information to operate the crane safely to prevent putting the operator and nearby workers at risk.



## Regulatory requirements

The Occupational Health and Safety Regulation, section 14.2(4)(c), requires articulating boom trucks to comply with the requirements of ANSI Standard ANSI/ASME B30.22-1993, *Articulating Boom Cranes*. That standard limits the maximum load rating to 85% of the load that will produce a condition of tipping with the boom in the least stable direction, relative to the mounting for commercial truck vehicle-mounted cranes with stabilizers extended and set. The testing must be done in accordance with ANSI/SAE J765, *Crane Load Stability Test Code*.

Load ratings for some radii may be based on structural competence of the crane and carrier vehicle rather than stability. If the crane specification includes additional ratings for directions other than the least stable, such ratings also may be governed by structural competence rather than stability. For such specified additional ratings, the work area shall be indicated, and for those ratings that might be governed by tipping

loads, the allowable load may not exceed 85% of the load that will produce a condition of tipping. For all operational applications, the crane load ratings established by the manufacturer shall not be exceeded.

A durable rating chart with legible letters and figures must be provided with each crane and attached in a location available to the operator while at the controls. The following must be provided:

- The load rating chart must include a range of manufacturer's crane load ratings at stated operating radii, work areas, boom lengths, configurations, and jib lengths.
- In areas where no load or a reduced load is to be handled, a work area figure or load rating chart must so state.
- Recommended reeving for the hoist lines must be shown if the crane is equipped with a winch.

